Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) A superluminal transmission device for measuring the ~~runneling~~ tunneling time of a wavepacket comprising:

a transmission source for generating a wavepacket, the wavepacket comprising a wavefront component;

a signal controller for generating a signal pulse;

a signal receiver for receiving the signal pulse;

a selective-transmission device comprising a quantum barrier defining a transmission distance, said selective-transmission device being in signal communication with the transmission source, the signal controller, and the receiver such that the wavepacket is transmitted to the barrier and the wavefront component of the wavepacket tunnels through the barrier and across the transmission distance to the receiver causing superluminal group velocities; and

a monitor in signal communication with the receiver for determining the ~~tunneling~~ centroid time for each of a plurality ~~the~~ wavepacket peaks; and

an analyzer for computing the vector group velocity of light from the measured centroid times.

2. (Currently Amended) The superluminal transmission device ~~A transmitter~~ as described in claim 1, wherein the quantum barrier comprises a pair of transmission barriers

positioned parallel to each other and separated by an air gap having a length.

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3. (Currently Amended) The superluminal transmission device ~~A transmitter~~ as described in claim 2, wherein the pair of transmission barriers are tanks defining an internal volume capable of holding a liquid.

4. (Currently Amended) The superluminal transmission device ~~A transmitter~~ as described in claim 3, wherein the liquid is water.

5. (Currently Amended) The superluminal transmission device ~~A transmitter~~ as described in claim 2, wherein the length of the air gap can be adjusted such that the length of the air gap enhances the wavefront component of the wavepacket transmission.

6. (Currently Amended) The superluminal transmission device ~~A transmitter~~ as described in claim 1, wherein the transmitter comprises a pulse transmitter in signal communication with a transmission antenna.

7. (Currently Amended) The superluminal transmission device ~~A transmitter~~ as described in claim 6, wherein the antenna is a five element folded-dipole Yagi antenna.

8. (Currently Amended) The superluminal transmission device ~~A transmitter~~ as described in claim 1, wherein the transmitter further comprises a wavelength selector such that only desired radio wavelengths are transmitted by the transmitter.

9. (Currently Amended) The superluminal transmission device ~~A receiver~~ as described in claim 1, wherein the receiver comprises a radio amplifier in signal communication with a receiver antenna.

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10. (Currently Amended) The superluminal transmission device ~~A receiver~~ as described in claim 9, wherein the antenna is a five element folded-dipole Yagi antenna.

11. (Currently Amended) A method for measuring the vector group velocity of light ~~a specified frame of reference~~ comprising utilizing a superluminal transmitter as described in claim 1 to measure the centroid ~~tunneling~~ time ~~and comparing said centroid tunneling time verse a standard~~.

12. (Currently Amended) A method for determining the date and time comprising utilizing a superluminal transmitter as described in claim 1 to measure the oscillation of the centroid ~~tunneling~~ time over a specified period of time, ~~and comparing~~ determining the Doppler redshift direction from said centroid ~~tunneling~~ time oscillation, and comparing said Doppler redshift direction verse ~~a standard~~ the Earth's motion.

13. (New) A method for determining the direction of the cosmic microwave background Doppler redshift comprising utilizing a superluminal transmitter as described in claim 1 to measure the oscillation of the centroid time over a specified period of time and determining one of the centroid time minimum.

14. (New) A method for determining the time and date comprising utilizing a superluminal transmitter as described in claim 13 to compare the direction of the cosmic microwave background Doppler redshift relative to the Earth's motion.

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15. (New) The superluminal transmission device as described in claim 1, wherein the analyzer further determines the cosmic microwave background Doppler redshift direction by monitoring the centroid tunneling time oscillation over a specified period of time and determining one of the centroid tunneling time minimum.

16. (New) The superluminal transmission device as described in claim 15, wherein the analyzer further determines the date and time by computing the cosmic microwave background Doppler redshift direction relative to the Earth's motion.

17. (New) The superluminal transmission device as described in claim 1, wherein the selective transmission device is rotatable about an axis such that the direction of the wavepacket transmission may be shifted about the axis.

18. (New) The superluminal transmission device as described in claim 17, wherein the analyzer further determines the cosmic microwave background Doppler redshift direction by monitoring the centroid tunneling time oscillation as the direction of the wavepacket transmission is shifted about the rotatable axis and determining one of the centroid tunneling time minimum.